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# SCIENCE

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FRIDAY, JULY 13, 1888.

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NO SCIENTIFIC REPORT published by the government this year has been more important than that just made by Dr. J. J. Kinyown, assistant surgeon in the Marine Hospital Service, upon the germicidal powers of the different methods of disinfection practised under the direction of the Louisiana Board of Health at the quarantine station below New Orleans. The report is important, not only because it shows the degree of protection against the importation of infectious diseases through the important port of New Orleans; but also, since the methods of disinfection practised at other quarantine stations are similar to those in use there, the experiments show approximately the efficacy of each mode of disinfection, and suggest changes that should be made in their use. The three methods of disinfection tested were by the use of bichloride-of-mercury solution, the application of dry and moist heat, and fumigation with sulphur dioxide. Dr. Kinyown finds the first of these methods defective, because of the difficulty of getting the disinfecting-agent into cracks and corners, carpets, rubber goods, the under sides of decks, and into lockers, etc. He discovered in all these localities and articles that the micro-organisms existing before the disinfection had not been destroyed, and he found them as plentiful on the floor of the fore-castle of one ship, that was exceptionally filthy, after it had been drenched with bichloride of mercury for an hour, as before. Dr. Kinyown recommends, that, in order to make this mode of disinfection more effectual, the bichloride of mercury be applied with a spray produced by a connection with a steam-boiler, and that it be applied after fumigation by sulphur. The results from the application of dry and moist heat were the most satisfactory of all. Cultivations of various disease-germs exposed to a dry heat of  $80^{\circ}$  C., and afterwards to steam at a temperature of  $100^{\circ}$  C., were, with few exceptions, destroyed. Dr. Kinyown thinks, that, in order to secure absolute protection, the heat should be made greater and the time of exposure increased. In eleven experiments seventy-four disease-germs were placed in vessels among articles to be disinfected by the use of sulphur dioxide, but only sixteen of the whole were destroyed, or less than twenty-two per cent. Dr. Kinyown has very little to say about this method of alleged disinfection, except to recommend that the sulphurous fumes be applied in larger quantities, and confined in the compartments to be disinfected a longer time. But he reports his experiments in full, and lets them speak for themselves. The net result of these tests is to show that some disease-germs escape even when the most effectual modes of disinfection practised at quarantine below New Orleans are resorted to, and that less than one-fourth of them are killed when the least effective method is used. We assume that quarantine and city health officers everywhere will profit by the suggestions of this report, and that the public will be better protected in the future than in the past.

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AT THE RECENT MEETING of the Massachusetts Assembly of the Agassiz Association in Boston, Prof. W. O. Crosby called attention to the fact that Mr. Harlan H. Ballard, the president of the association, in the 'Three Kingdoms' and elsewhere, has rightly emphasized the importance of studying the local natural history, and explained that this is especially desirable for the department of geology and mineralogy, since the rocks and minerals are in most

parts of the country, and especially in New England, much more localized than the fauna and flora. Thus, while the animals and plants must always change gradually from place to place, and may be nearly the same for an entire State, the geological features, the rocks and minerals, change very abruptly, and sometimes completely, as we pass from one formation to another; so that adjoining towns and neighborhoods are sometimes as strongly contrasted in their mineralogy and geology as the most distant parts of the earth. It will be readily seen that where this is true it is particularly desirable that each chapter should give attention chiefly to its own field; and interesting results may be expected from the presentation and comparison, at these annual meetings, of the work done in the different parts of the State. In this way each chapter will gain not only a valuable training in observation, but also that real and satisfactory knowledge of the local geology which can be obtained only through original study; while through the interchange of results and ideas the field is broadened, and the methods of work gradually improved. Professor Crosby spoke further as follows: "During all the time that I have been conducting the lessons in elementary and determinative mineralogy, I have felt that we should realize more fully the ideal plan of work for the Agassiz Association, if I could co-operate with members and chapters in the study of their local geology and mineralogy. Of course, it would be preposterous for any one to propose to do this for the entire organization. Not to mention other difficulties, such as the time required, it would be out of the question for any one specialist to have that detailed knowledge of the geology of the entire United States which would be required for the successful operation of such a plan. The organization of the Massachusetts Assembly has, however, suggested to me that I might, perhaps, be of some real assistance in this direction to the Massachusetts chapters. But, in offering to assist those who are really in earnest, I have no thought, of course, of pre-empting the field, or excluding other geologists. I simply desire to say that I, for one, shall be glad, so far as my time and ability will permit, to render such assistance as may be needed. I can help you sometimes in the determination of specimens; although it is to be hoped, for your own sakes, that you will heed Mr. Ballard's advice to exhaust your own resources before applying for such aid. I can, perhaps, offer useful suggestions as to the best plans for work in particular localities, and may be able to put you in the way of getting the necessary maps, etc., for the representation of your results. Lastly, though I can imagine that Professor Hyatt would advise me to proceed very slowly here, I can often aid you in finding what has been published on the geology and mineralogy of the different sections of the State. I shall, however, be very reluctant to do any thing in this direction in advance of good, original work in the field. The literature of your field would at first, in most cases, be only a hinderance to good work. It is to be hoped that every year you will bring your best results to these meetings, not merely brief reports of what you have worked at, but the work itself. Your principal reward will, of course, be the training and knowledge gained, and the satisfaction of having done good work. But it would be very strange indeed if such an exhibit of a year's results did not reveal something new to science, and worthy of publication; and this is another direction in which we should be glad to lend a hand." No chapter in Massachusetts can afford to neglect so rare an opportunity as Professor Crosby offers. Will not geologists in other States take a hint from this wise and generous method of encouraging this important branch of study in a practical manner?